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SEA BASED LOGISTICS IN OPERATIONAL MANEUVER FROM THE SEA

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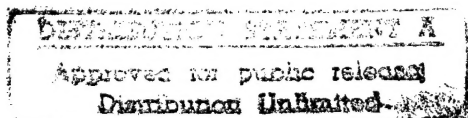
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The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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### Abstract

With the publication of Forward . . . From the Sea, the Navy and Marine Corps changed their operational doctrine from seeking worldwide, blue-water superiority to power projection in littoral areas. The Marine Corps expounded its portion of the doctrine as operational maneuver from the sea (OMFTS) stressing the application of firepower and maneuver. Unfortunately, the emphasis on firepower and maneuver within OMFTS has overshadowed combat service support (CSS) concerns.

Since OMFTS changes the means of employing combat power, traditional amphibious CSS techniques need to be modified to meet the unique logistic demands of OMFTS. Sea based logistics (SBL) has been proposed as the solution for providing CSS for OMFTS operations. The most prominent feature of SBL is that it supports combat units directly from ships instead of building a logistic infrastructure ashore.

Since the use of SBL is constrained by equipment limitations and traditional methods of logistic delivery and packaging, the use of firepower and maneuver as envisioned in OMFTS is not currently possible. SBL is capable of supporting OMFTS in limited situations; however, more emphasis must be directed at finding methods to enhance and expand SBL support for OMFTS.

*A military, naval, littoral war when wisely prepared and discreetly conducted is a terrible sort of war. Happy for the people who are sovereign of the sea to put into execution! For it comes like thunder and lightning to some unprepared part of the world.*

- Thomas More Molyneux, 1759

## **I. Forward . . . From the Sea**

Founded on a vision similar to the one proposed by Thomas Molyneux, the operational doctrine of the United States Navy and Marine Corps has undergone a fundamental change in the past five years. With the demise of the Soviet Union, the Naval Services' operational strategy of seeking global "blue water" superiority has shifted to an operational strategy of "littoral warfare". The new doctrine proposes "operating from highly mobile 'sea bases' in forward areas . . . free of the political encumbrances that may inhibit and otherwise limit the scope of land-based operations in forward theaters".<sup>1</sup>

As the Navy began to analyze and publish a new version of operational art as proposed in Forward . . . From the Sea, the Marine Corps published its doctrine for prosecuting a littoral land campaign within FMFM 1 Warfighting, from which the concept of Operational Maneuver from the Sea (OMFTS) was developed. The promotion of littoral warfare has provided a forum to mend the doctrinal split that has existed between the Navy and Marine Corps during the Cold War.<sup>2</sup> Defining littoral warfare campaigning for the Navy has been a revolutionary process, shifting focus from blue water, fleet-on-fleet engagements to brown water, power projection operations. For the Marine Corps the transition has been an evolutionary process of applying a new

paradigm, OMFTS, for employing forces from ships to the shore.

The Navy and Marine Corps have the force structure today to conduct limited operational level power projection into the littoral regions of the world using OMFTS. However, the degree of capability to completely fulfill the vision of OMFTS doctrine is still constrained by current equipment limitations and traditional logistic methods. This paper will analyze some of the issues which effect the Marine Corps' application of sea based logistics (SBL) in support of OMFTS. Specifically, it will illuminate how methods of distribution and methods of packaging shape the degree that SBL can support OMFTS.

## **II. What is Sea Basing?**

As defined by the Marine Corps, SBL is "the deliberate, managed provision of support to LF/MAGTF [Landing Force/Marine Air-Ground Task Force] units ashore from ships off shore."<sup>3</sup> This definition is broad enough to avoid imposing limits as to the process or methods to be used, giving the commander and the logistician a measure of flexibility as to how the force will be logistically supported. However, the success or failure in using SBL can be narrowly defined by how well supplies, equipment, and personnel move through the logistic system, which in turn influences a commander's ability to accomplish a mission.

While a rudimentary definition of sea basing exists, there is limited experience or knowledge in the practical application of SBL as proposed in Forward . . . From the Sea. During 1989 and 1990, the Navy and Marine Corps conducted amphibious exercises to

define the operational aspects of SBL. Both exercises tested a concept stressing helicopter delivered combat service support (CSS). The Center for Naval Analyses (CNA) observed each of those operations and highlighted the strengths and shortcomings of SBL.<sup>4</sup>

The strengths of SBL were a centralized control of logistics, collocation of Marine and Navy planning for increased efficiency and responsiveness, clearly defined directions for logistic helicopters, a backup plan by using mobile CSS detachments to augment and replace logistic helicopter support, and validating backload/retrograde operations.

Areas of weakness were rigidity of the air tasking order for logistic aircraft, lack of cross-decking and inter-ship transfer of supplies, lack of a true test of ground maintenance capabilities, equipment mismatches (equipment too heavy for airlift) reduced air support, and lack of long term test plan for evaluating SBL. The CNA concluded that, "many of the existing problems with sea-based logistics are structural rather than procedural. These structural problems include equipment mismatches, the large assault ship requirements to support the CH-53E operations, and possible lift inadequacies of future assault ship designs."<sup>5</sup>

### **III. Operational Maneuver From The Sea (OMFTS): The New Doctrine**

Conducting operations from a sea base is not a new concept within the Marine Corps. Amphibious operations have always been sea based because their very nature requires an invading force to

transition from a sea base (ships) to the shore. However, one of the main tenets of OMFTS is an effort to reduce the logistics buildup ashore by keeping the maximum amount of combat service support infrastructure, services, and supplies at sea.<sup>6</sup>

The overall aim of OMFTS is to alter the current warfighting doctrine of the Marine Corps and focus on the use of maneuver and firepower instead of attrition warfare. OMFTS doctrine does not change the need or utility of amphibious forces to conduct forced entry operations, but it does change the method by which amphibious forces will be employed:

Instead of terrain or inflicting casualties, the objective of maneuver warfare is to collapse the enemy's will to fight. OMFTS seeks to shatter the enemy's cohesion through a series of rapid, violent, and unexpected actions, creating a turbulent and rapidly deteriorating situation with which the enemy cannot cope. This is accomplished by using tempo, speed, and surprise to apply strength against selected critical vulnerabilities of the enemy.<sup>7</sup>

The OMFTS vision intends to force the enemy to react to U.S. naval force initiatives of maneuver and firepower; however, what remains unanswered is how the Navy and Marine Corps will logistically support OMFTS. The recently released Marine Corps draft doctrine for OMFTS mentions SBL as a conceptual alternative to traditional CSS methods.

#### **IV. Traditional Amphibious Operations**

Unlike traditional amphibious assault doctrine based on attrition warfare, OMFTS doctrine emphasizes the use of bold strokes to exploit enemy weaknesses in order to achieve decisive results.<sup>8</sup> The agility needed to conduct unimpeded operations

will require a change in current methods of logistic support. If sea basing is the preferred solution to enabling bold actions, then SBL must modify the traditional amphibious doctrine and techniques where logistic power ashore is built from zero to a fully functioning, shore-based capability, immediately after the assault forces land.

Current amphibious doctrine requires establishing a Beach Support Area (BSA) whether it is a general offload of amphibious ships or a Joint Logistics Over-the-Shore (JLOTS) operation from maritime prepositioning vessels or commercial ships. Building and expanding a BSA is a time consuming, labor and equipment intensive task as supplies are put ashore. A multitude of facilities may be built such as ammunition dumps, fuel farms, supply depots, hospitals, motor pools, billeting, showers, laundries, mess halls and expeditionary airfields. While helicopter support is available to move emergency logistic requests during the initial build-up, the vast majority of equipment and supplies move from ships to the BSA by landing craft.

As the plethora of logistic material arrives, the need for space dramatically rises. The BSA disperses to cover hundreds of acres as the facilities to maintain combat operations expand. But this expansion increase the vulnerability of the BSA and its logistics infrastructure. While the force is embarked and miles out to sea, it is relatively immune from land attack. Once ashore the BSA becomes susceptible to attack, capture or



interdiction due to its immobile nature. Therefore, sea basing offers an alternative to traditional amphibious logistic support by balancing the risk of putting a large, exposed, logistic footprint ashore against the CSS principles of timely and efficient resupply by keeping most, if not all, CSS functions based on ships. Eliminating the logistics footprint ashore is critical to the application of OMFTS.

## **V. Logistic Constraints**

"Logistics is governed by immutable laws. Material has mass, and the movement of mass requires effort. The movement of mass over distance requires time, which is determined by the speed of movement."<sup>9</sup> This may seem simplistic, but these laws govern the delivery of logistics just as they govern an aircraft in flight or a ship on the sea. OMFTS attempts to mitigate their effects by changing the logistic paradigm. "Without the capability for matching mobility, combat service support units are destined to form large static combat service support areas in close proximity to ports or airfields."<sup>10</sup> OMFTS is shifting the focus of logistics to finding new methods of CSS distribution and storage techniques. SBL seeks to reduce the logistic tether that currently binds units to well-stocked shore bases. By eliminating the shore based installations, combat units are permitted greater flexibility in maneuvering around the battlefield since they are not tethered to a fixed supply point.

Commanders and their staffs need to examine and understand the capabilities and limitations of SBL as an integral part of

OMFTS. They must go beyond defining OMFTS in terms of maneuver<sup>11</sup> and firepower<sup>12</sup> and their interrelationship on the battlefield. This will be a difficult task since the emphasis concerning maneuver and application of firepower is clearly favored in the Marine Corps' OMFTS doctrine:

What distinguishes Operational Maneuver from the Sea from all other species of operational maneuver is the extensive use of the sea as a means of gaining advantage, an avenue for friendly movement that is simultaneously a barrier to the enemy and a means of avoiding disadvantageous engagements. The aspect of operational maneuver from the sea may make use of, but is not limited to such techniques as seabased [sic] logistics, seabased [sic] fire support and the use of the sea as a medium for tactical and operational movement.<sup>13</sup>

While emphasis on maneuver and firepower is understandable, integrating logistics support from a sea base to land units is essential for successful application of OMFTS. Therefore, focus needs to be redirected to recognize logistic requirements necessary to make sea basing a viable tool. The successful use of SBL will depend upon two interrelated distribution components, methods of delivery and methods of packaging.

#### **VI. Methods of Packaging**

In the past two decades the commercial shipping industry has automated and mechanized their operations. Economic measures have forced civilian container standardization to gain the most efficient and profitable use of cargo space aboard commercial ships. The method of packaging has shifted to standardized, 8x8x20 foot containers. The era of "break-bulk" shipping (moving cargo on individual pallets) is disappearing. Individual pallets

and boxes are now consolidated into standard shipping containers (also known as unitized packaging) to optimize the use of space and distribution of weight. The military also recognized the need for container standardization and the Marine Corps adopted the standard 8x8x20 foot container dimensions in 1974.<sup>14</sup> However, amphibious ship design has not been modified to accommodate this standardization.

As a result of expanding commercial container operations, a gap developed between amphibious ship design and logistic capabilities in terms of using commercial containers and exploiting commercial shipping practices for military operations. The historical trend in maritime/amphibious operations has been that 85% to 95% of all military cargo is moved by sea on commercial ships.<sup>15</sup> Using OMFTS will not change the need to employ commercial vessels or alter the ratio of military sustainment moved by sea. The heavy reliance on commercial ships exacerbates the deficiency of amphibious ships in that they are not capable of transporting commercial size containers.

The disparity between civilian and military shipping practices will effect the ability of the naval services to conduct OMFTS. Amphibious ships store cargo in "break-bulk" configurations due to the need for immediate access to all types of supplies and due to economies of scale (large quantities of items are distributed to the user in small increments). While unitized container packaging is more efficient in terms of strategic movement, it is detrimental to the tactical

distribution of logistic support. Rarely does a combat unit, battalion size or smaller (600 personnel), need an 8x8x20 foot, unitized container of any product. During combat operations, front line units have neither the time, nor personnel, to unpack and re-distribute items shipped in unitized containers. Since OMFTS expands the area of operation, the efficient and timely delivery of CSS will be critical to conduct a successful mission. Only an air delivery system has the ability to conquer the distances between ships 150 miles from shore to units 100 miles inland.

While container movement is a difficult task on a beach, in a port, or at a landing zone, it is an impossible task to complete on amphibious ships that are not designed to handle unitized cargo containers. Compounding the problem are two factors. First, commercial ships are designed to maximize the use of space reducing access to cargo in transit. Such storage techniques are not suitable for combat operations which require easy and timely access to supplies. Second, even if present day amphibious ships were capable of handling containers, there is no method to cross-deck containers between ships. These limitations make the use of commercial ships doubly restraining for supplementing combat operations that are sea based. The current inability to store and use 8x8x20 foot containers on amphibious ships reinforces the tactical imperative of exploiting the amphibious ship's "break-bulk" configuration. Break-bulk storage allows immediate access to material at the expense of optimal use

of cargo storage areas.

## VII. Methods of Distribution

The other major constraint in sea based operations is the ship-to-shore delivery method. During traditional amphibious assaults, combat units have a direct link to the BSA. Logistic support can be delivered at all hours, in almost any weather conditions via land or air transportation. By dissolving the BSA and relying on SBL, the source of logistics is protected; however, the logistic pipeline becomes a critical vulnerability since the main logistic link is by air transport. This has the potential to alter the commander's tactical decisions to ensure a reliable logistic flow.

The distribution system (pipeline) for logistics is the critical focal point for providing timely and sufficient CSS within OMFTS operations:

The pipeline consists of numerous carriers between the provider and the user. Portraying the system as putting the item from the ship into the hands of the Marine is false. This oversimplification creates two conceptual impediments. First, vital transportation assets are overlooked. Second, inventory management is not applied throughout the pipeline.<sup>16</sup>

OMFTS uses the sea to move forces where they can have the greatest effect with the least risk. It requires an assault and resupply capability that extends a hundred or more miles inland. To sustain OMFTS forces that distance from amphibious shipping requires a robust transportation and distribution system. "This [OMFTS] distribution system must have a throughput capability

beyond that provided by existing surface, rotary wing, or anticipated tilt rotor assets."<sup>17</sup> The OMFTS vision of SBL is not possible for high intensity combat using today's logistic distribution resources and methods.

Key to making the logistic distribution system effective is the application of accessibility. While the Marine Corps has years of experience in spread-loading supplies throughout the amphibious task force, accessibility has never before presented a problem since all supplies have been available in break-bulk storage or put ashore in a BSA for later distribution to units:

Sustainment of OMFTS thus requires two major assets not now in existence. (1), a true functional seabased [sic] configuration of assets capable of providing a paid throughput of material to combatants, using dynamic selective offload procedures and effective transfer, tracking and communication methods and (2), an all-weather, heavy air lift cargo transfer system for effective ship to shore movement of both wet and dry cargoes.<sup>18</sup>

## **VII. The Utility of SBL in OMFTS**

In conducting OMFTS with SBL the competition for transportation assets between combat and CSS units will reduce a commander's options of maneuver and support. Executing OMFTS with the limited transportation systems available will magnify the limits of sea basing. "Neither surface nor existing/ replacement rotary wing assets are capable of supplying MEB-level force material requirements at required rates."<sup>19</sup> The Marine Corps cannot conduct OMFTS today on the scale envisioned for large-scale conventional operations, but OMFTS can be practiced in certain situations such as humanitarian relief operations and

low intensity conflict. Sea basing is especially applicable in operations other than war (OOTW). Former Marine Corps Commandant Carl Mundy, Jr. advocated sea basing, "is ideal for the limited support infrastructure called for in many humanitarian relief situations."<sup>20</sup>

OMFTS will support U.S. naval forces in "the extensive use of the sea as a means of gaining advantage, an avenue for friendly movement that is simultaneously a barrier to the enemy and a means of avoiding disadvantageous engagements."<sup>21</sup> By enabling naval forces to gather decisive combat power at a point of their choosing, OMFTS proposes a change in logistic support "to eliminate, or at least greatly reduce, the need to establish supply facilities ashore."<sup>22</sup>

The political ramifications the U.S. might face in crisis situations around the world make SBL an attractive alternative to a traditional BSA. "There is a fine line between deterrence and provocation, and a large logistic footprint on the ground . . . could cross that line and inhibit future U.S. regional access and influence."<sup>23</sup> Sea basing can be selectively applied to politically sensitive situations. The primary restraint will be the level of logistic consumption and the transportation assets needed to delivery the required CSS.

SBL is a natural compliment to OMFTS to avoid attrition warfare operations. The criticism has been made that traditional amphibious assaults are obsolete due to the underwater mine threat and the lack of surface, ship-to-shore assets.<sup>24</sup> Since

the high cost of attrition amphibious assaults, as seen in World War II, is no longer acceptable, OMFTS doctrine is offered as a response to the expanding proliferation of highly lethal, precision targeted weapons that can be used against ships close to the shore or fixed land based installations. A large logistic footprint is a target of opportunity that exposes a center of gravity for an adversary to exploit, an opportunity that would be denied using SBL.

Like all doctrine, OMFTS is subject to the capability of resources the nation is willing to fiscally support. "Affordability is a product of requirement evaluation."<sup>25</sup> Will the Navy and Marine Corps be willing to allocate the funds needed to make SBL work? "What is evident at this point is that the Marine Corps cannot afford to maintain and replace its current inventory in-kind if it intends to embrace the tenets of "From-the-Sea".<sup>26</sup> The OMFTS doctrine may be sound and necessary, but the capability to logistically support such operations is limited by fiscal resources.

#### **VIII. Conclusion**

What can be done to make SBL in OMFTS an effective alternative to traditional amphibious doctrine? First, the Navy and Marine Corps must conduct an annual OMFTS exercise to continue the process of defining and refining methods for conducting SBL. To date, only two sea basing exercises have been documented by the Center for Naval Analyses. While these reports cited deficiencies in current practices they concluded that "SBL



is a viable concept and one that needs to be explored further."<sup>27</sup> What the Marine Corps and Navy face today is a difference between a viable concept and effective application. The Marine Corps has a solid foundation for the combat employment of forces in OMFTS but still lacks a logistics concept and capability to support the visionary use of SBL within OMFTS.

Second, the newer amphibious ships, while being very capable for traditional amphibious missions, are not built to support sea basing as it is presently defined in OMFTS. Once SBL methods are established, ship design must be altered to offer an effective use of commercial shipping containers aboard amphibious ships and methods must be developed for inter-ship transfer of containers.

Third, tactical logistic distribution will remain a problem and most likely increase the need for dedicated, heavy-lift aircraft due to the increased range of OMFTS. Delivery of weapons systems such as the AAV (replacement amphibian assault vehicle) and the V-22 (replacement medium lift aircraft) are essential to provide the tactical lift to enable OMFTS doctrine to be executed, but these equipment enhancements will have a minimal effect on reducing the CSS distribution problem. The efforts to make sea basing work must focus on either reducing the logistic demands of ground units and/or expanding the capability to transport logistics over increased distances by air.

Finally, the ground combat element of the Marine Corps should explore the possibility of obtaining a sea basing platform similar to the TAV-B ships which are designed to specifically

support aviation maintenance and logistics. TAV-B ships can carry either a full complement of containers directly from CONUS to overseas ports, or they can provide a sea based maintenance of aircraft components without moving maintenance facilities ashore. By obtaining ground versions of the TAV-B, the Marine Corps would be able to conduct ground maintenance and supply functions from a sea based mode which is not available from current commercial or amphibious ships.

Today, the Marine Corps and Navy can conduct sea basing in operations that face a minimal conventional threat or in OOTW. However, what is evident is that doctrine and technology have not yet meshed to produce a practical ability to conduct SBL with the breadth and scope as envisioned in OMFTS. CNA studies of sea basing have concluded that additional testing is needed to establish feasible methods for SBL operations.<sup>28</sup> Yet, it is clear that sea basing, as a method of logistic employment, is needed to make OMFTS a viable method of operation. The successful use of OMFTS will depend less on an adversary's actions and more on an expanded vision that goes beyond firepower and maneuver to embrace SBL as a vital component of successful operational maneuver from the sea.

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